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EDUCATIONAL THEORIZING AND CURRICULUM CHANGE.

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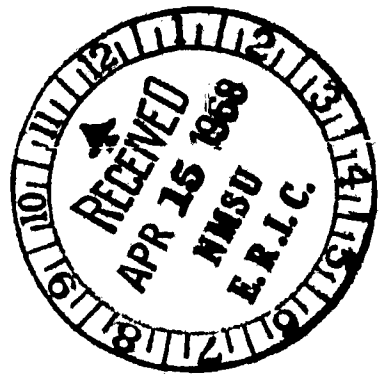
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EDUCATIONAL THEORIZING IS A NEEDED ENDEAVOR IN THE EDUCATIONAL RESEARCH PROCESS. WHILE THEORIZING HAS OFTEN BEEN EQUATED WITH PHILOSOPHIZING, IT IS NOT THE WHOLE OF IT, SINCE PHILOSOPHY HAS OTHER TRADITIONS WHICH MAKE THE PHILOSOPHY OF EDUCATION A LEGITIMATE PART OF EDUCATIONAL THEORIZING. FOUR KINDS OF THEORIZING HAVE BEEN SORTED OUT--(1) THEORIZING ABOUT EDUCATIONAL REALITY (EVENT THEORIZING), (2) THEORIZING ABOUT BEHAVIORAL OUTCOMES OF EDUCATION (VALUATIONAL THEORIZING), (3) THEORIZING ABOUT LOGIC OR STRUCTURE OF LANGUAGES IN EDUCATION (FORMAL THEORIZING), AND (4) THEORIZING ABOUT PRACTICES (PRAXIOLOGICAL). ALL EDUCATIONAL THEORIZING IS SEEN AS DIRECTED TOWARD KNOWLEDGE PRODUCTION. PRACTICAL CURRICULUM KNOWLEDGE IS POWER TO BRING ABOUT CURRICULUM CHANGE, BUT IT MUST BE ADJUSTED BY THE ARTFUL TEACHER. CURRICULUM CHANGE SHOULD BE BASED UPON ADEQUATE PRAXIOLOGICAL CURRICULUM THEORIZING, THE ART OF THE TEACHER, AND SUPPORTIVE POLICY. (SF)

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EDUCATIONAL THEORIZING

AND

CURRICULUM CHANGE

by

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The Intent of this Paper

Educational theorizing is recognized as a needed endeavor in the educational research process. Moreover, such theorizing has been done and is being done, and does change what goes on in our schools. The question, however, is how ought such theorizing be related to educational change. It is my intention to attempt an answer to this question within the context of curriculum change. In order that the attempted answer have an illustrative basis in actual on-going educational research, the current project underway in the Social Studies Curriculum Center of The Ohio State University, The Development of Economics Curricular Materials for the Secondary Schools, will be discussed.

Educational Theorizing and the Curriculum

To begin with, what educational theorizing is, what curriculum is, and how educational theorizing is related to curriculum must be stated as clearly as possible. Although I have written about these matters in other papers (1), repetition in the form of summarization is required, if my attempted answer to the central question of this paper is to be understood.

In education, theorizing is most often equated with philosophizing. That this equation is common not only among the unsophisticated is patent when one attends to the title of one of the philosophy of education journals, i.e., Educational Theory. The source of this equation is not difficult to cite. Ancient and influential traditions

die hard, and one of these makes philosophy the most general science of existence. Philosophy of education, according to this tradition, would be theorizing about the basic kinds and structures of educational reality. Notice that this tradition carries with it a claim to theorizing as done by scientists. Consider that learning theorists, such as Thorndike, have addressed themselves to the basic kinds and structures of educational human behavior, learning, and have done so as scientists of education and not as philosophers of education. Theorizing about the basic structures and kinds of educational reality (about educational events) must be turned over to the educational scientists by rejection of this tradition of philosophy.

Philosophy, nevertheless, has other traditions which make philosophy of education a legitimate part of educational theorizing but not the whole of educational theorizing. Consider that philosophers address themselves to the problem of the nature of the good life. Plato's Republic attests that this tradition is also an ancient one, for therein is presented a solution to the problem of what constitutes the good life. The presentation is not theory about the basic kinds and structures of human reality but is theory about the ideal kinds and structures of human reality (what kinds and structures of human reality are valuable). Plato's words indicate that he is not theorizing about what is or will be:

"Well," said I, "in heaven, perhaps, a pattern of it is indeed laid up, for him that has eyes to see, and seeing to settle himself therein. It matters nothing whether it exists anywhere or shall exist; for he would practice the principles of this city only, no other." (2)

From this tradition, emerges one theoretical task for philosophers of education: theorizing about what is good education. To express the task in the more usual way, the task is to set forth objectives or purposes or behavioral (3) outcomes of education. A second theoretical task for philosophers of education emerges from yet another tradition of philosophy, namely, logic. Again the tradition is ancient. The logician, Aristotle, immediately comes to mind. This tradition, however, required modification. The "tendency to sublime the logic of our language" (4) had to be overcome. Logic had to be stretched beyond the bounds set by the seventeenth century rationalistic temper and maintained today by scientific empiricism (5) and logical empiricism (6). The later Wittgenstein did so:

The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not a result of investigation: it was a requirement.) The conflict becomes intolerable; the requirement is now in danger of becoming empty. (7)

These investigations of the logic of or structure of languages, nevertheless, are not scientific (empirical); they are analytic. As Wittgenstein stated it:

These are, of course, not empirical problems; they are solved, rather, by looking into the workings of language, and that in such a way as to make us recognize those workings: in despite of an urge to misunderstand them. (8)

Analytic philosophy comes of age and devotes itself to the logic of languages, not in the narrow sense of 'logic' as the syntax of mathematics and of science nor in the narrow sense of requirements

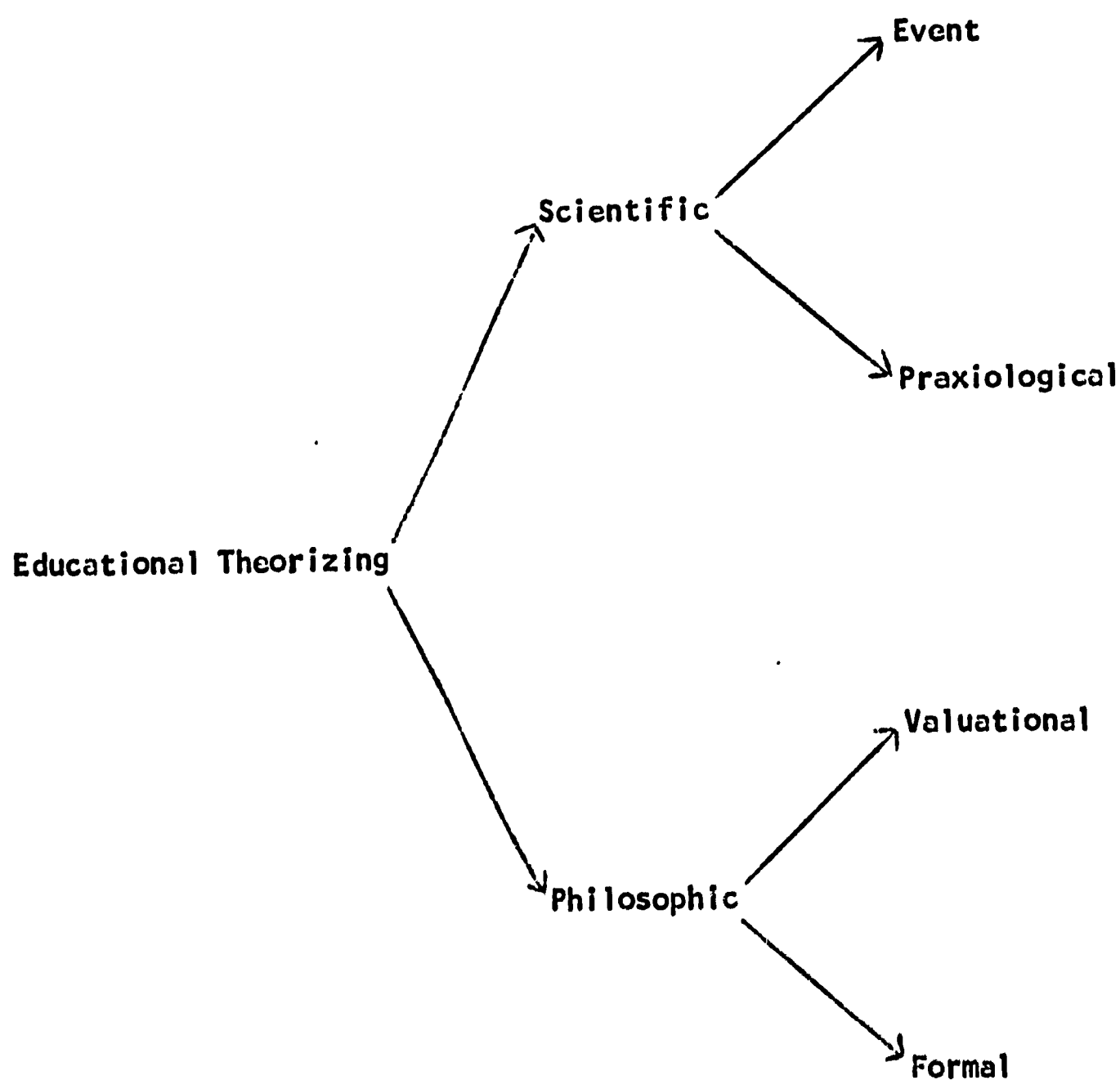
for argumentation but in the sense of all of the form of any realm of discourse. Philosophy of art, of literature, and even of ordinary language become enterprises along side of philosophy of mathematics and philosophy of science. The philosopher of education, thus, has another theoretical task: the analysis of languages in education.

Thus far, three kinds of theorizing about education have been sorted out:

1. theorizing about educational reality which I shall call 'event educational theorizing',
2. theorizing about behavioral outcomes of education which I shall call 'valuational educational theorizing', and
3. theorizing about the logic or structure of languages in education which I shall call 'formal educational theorizing'.

1 is a scientific enterprise, while 2 and 3 are philosophic ones. The above summary points up a missing part of the total task of educational theorizing. Education surely is concerned with practices, i.e., means for attaining selected behavioral outcomes. Some theorizing about practices is necessary to meet this concern. This fourth kind of educational theorizing I shall call 'praxiological' (9). Just as event educational theorizing, it is a scientific enterprise. It is not the case, however, that this fourth kind of educational theorizing can be reduced simply to a combination of the other three. To be sure, praxiological educational theorizing depends upon the other three kinds: valualational educational theorizing offers possible behavioral outcomes for which means could be developed and to which

so related, and event educational theorizing and formal educational theorizing indicate the interrelations required in the practices. Nevertheless, involved in praxiological educational theorizing is the development of new events (specially constructed teacher actions, student actions, and material objects) which are combined into practices. Schema 1 summarizes the total task of educational theorizing.



SCHEMA 1: KINDS OF EDUCATIONAL THEORIZING

In order to state what curriculum is, one must do theorizing. This assertion is based upon what theory is. Theory is a group of related statements which are propositions. The statements must be propositions in the sense of declarations about something or the statements can be neither adequate nor inadequate. Commands, exclamations, and questions are not knowledge claims. The reason for theorizing, of course, is to come up with propositions which will check out as adequate, and hence be knowledge. A proposition, then, as to what curriculum is involves one in theorizing. An approach to the definition of 'curriculum' which I used in "Instruction as Influence Toward Rule-Governed Behavior" (cited in footnote 1) was to propose that curriculum is the presented instructional content (C_I^P) which along with the presented motivational content (C_M^P) constitute teacher behavior (B_T). Stated symbolically and more precisely:

$$B_T = f(C_I^P \text{ R } C_M^P)$$

Instructional content received (C_I^R) and motivational content received (C_M^R) constitute student behavior (B_S). Stated symbolically and more precisely:

$$B_S = f(C_I^R \text{ R } C_M^R)$$

Instruction (I), then, is a function of the relation between teacher behavior and student behavior. Stated symbolically:

$$I = f(B_T \text{ R } B_S)$$

This definition of 'curriculum' indicates the relation of curriculum to educational theorizing. 'Curriculum' is given meaning within an event educational theorizing that was broader than event curriculum theorizing. Curriculum is placed within instruction as the content of instruction. Curricular events are within instructional events. This means that curriculum must be taken not simply as structured subject matter but as structured subject matter that constitutes learning situations. To illustrate within our on-going research endeavor to develop economic curricular materials for secondary schools, the materials developed contained not only a sequencing of economic concepts but also a parallel sequencing of learning situations. (10)

In order to explicate further this relation of curriculum to educational theorizing, the outlines of the theorizing about curriculum based upon the above outlines of the theorizing about instruction will be presented. The theorizing about curriculum as an event which explicates it as structured subject matter was done within a discipline perspective--a perspective that viewed human behavior as rule-governed or reason-governed. Men devise different sets of rules or reasons. There are different behaviors. These sets are disciplines; and one comes to have diversity in his behavior, depending upon how many sets and rules or reasons within each set he comes to comprehend. Rules were further explicated as structures. Economics, therefore, was taken as a discipline or as a set of rules or reasons or as a kind of behaving, and so as structures. These structures enter instruction

as learning situations. This event curriculum theorizing (11) furnished a foundation for other theorizing related to the development of economics curricular materials for secondary schools.

Since economics was taken as structures, formal curriculum theorizing was required. There was an attempt to arrive at, in the words of Bruner, "the most fundamental understanding that can be achieved of the underlying principles that give structure to the subject" (12). Meno Lovenstein set forth the underlying principles of economics and thus its structure as follows:

By the structure of economics is meant (1) the division of the subject into its major categories and (2) the basic analytical themes which run through the entire subject. Economics may be divided into three groups of ideas: (1) Scarcity and basic economic decisions; (2) The flow of goods and services and the flow of money; and (3) The coordination of economic activity. The basic analytical themes are: (1) Marginal analysis and (2) Institutions. (13)

Formal curriculum theorizing was not sufficient. After the structure of economics was worked out, curricular materials had to be prepared. These curricular materials were more than a presentation of the structure of economics. They contained learning situations and also directives to the teachers as to their use. Praxiological curriculum theorizing was done. Moreover, this theorizing related the curricular materials as means to behavioral outcomes. It depended upon valuational curriculum theorizing which resulted in the statement of a behavioral outcome which is desirable. The outcome is to behave as an economist, i.e., to comprehend the structure of economics and to use it in the solution of problems. (See the Report cited in footnote 10.)

Schema 2, below, summarizes this discussion of what curriculum is and how educational theorizing is related to curriculum. The summarization is in the context of our research to develop economics curricular materials for the secondary schools.

EVENT INSTRUCTION THEORY

$$I = f(B_T \cdot R \cdot B_S)$$

$$\text{where } B_T = f(C_I^P \cdot R \cdot C_M^P) \text{ and } B_S = f(C_I^R \cdot R \cdot C_M^R)$$

EVENT CURRICULUM THEORY

$$I_C^P = \text{Learning Situations}$$

FORMAL CURRICULUM THEORY

Disciplines = Structures

Structure of Economics = 3 Groups of Ideas
2 Analytical Themes

VALUATIONAL CURRICULUM THEORY

Behavioral Outcome = Behaving as Economist

PRAXIOLOGICAL CURRICULUM THEORY

Behaving as an Economist = $f(\text{Curricular Materials})$

SCHEMA 2: CURRICULUM AND EDUCATIONAL THEORIZING

Educational Theorizing and Educational Change

Before the attempted answer to the question how ought educational theorizing be related to educational change can be given, the question of adequate theory or knowledge must be discussed more fully and the question of the relation of knowledge to practice must be treated.

Educational theorizing, whether it be scientific or philosophic, is directed toward knowledge production. What the educational theoretician strives to do is to state knowledge claims which can be shown to be adequate. Theory, thus, must be subjected to a verification process. If the theory does not check out, then it must be modified until it does. For example, in our economics project, the praxiological curriculum theory (the relation of curricular materials to behavioral outcomes) is being field tested with 44 classes. Table 1 indicates the school system and the respective number of teachers and classes involved.

<u>School System</u>	<u>Number of Teachers</u>	<u>Number of Classes</u>
A. Akron, Ohio	1	2
B. Cleveland, Ohio	1	1
C. Columbus, Ohio	1	2
D. Lakewood, Ohio	12	28
E. Lexington, Ohio	1	2
F. Massillon, Ohio	2	2
G. Plymouth, Ohio	1	1
H. Worthington, Ohio	1	2
I. Milton, Pennsylvania	1	2
J. Salt Lake City, Utah	1	2
Totals <u>10</u>	<u>22</u>	<u>44</u>

TABLE 1: SCHOOL POPULATION TESTED

This field testing is not being conducted under the rigorous requirements of scientific verification. To cite only one difficulty: the sample cannot be taken as representative of the total class of instances. Even if the testing were rigorous in all other respects, still the limitation in sampling would not permit a conclusion that the praxiological curriculum theory is adequate. Adequate theory must consist of generalizations that are applicable to all instances of a kind. The most that can be said, if the field testing verifies the theory, is that there is some suggestion that the theory might be adequate. Suggestibility rather than knowledge does not distinguish our curricular development project from all others. Indeed one could affirm without hesitation that all field testing of curricular materials fails with respect to external validity.

Supposing that the praxiological curriculum theory were adequate and so practical curriculum knowledge, what would be its relation to curriculum practice? Practical curriculum knowledge is power to bring about curriculum change, but it does not dictate specific curriculum changes. Its power consists in its applicability to all instances of a kind. It is a knowledge base which eliminates pure trial-and-error practice or more correctly, since pure trial-and-error practice is highly unlikely, misguided practice. Its lack of specificity arises from its power which raises practical theory beyond the uniqueness of every given instance. The lack of specificity requires the conjoining of the art of the teacher with practical curriculum knowledge so that it can be adjusted to the uniqueness of the context

in which the teacher finds himself. Curriculum practioneering along with practical curriculum knowledge will always be required to bring about adequate curriculum change. It should be obvious from the discussion and the earlier discussion about praxiological theorizing that it is practical knowledge, and not event knowledge or formal knowledge or valuational knowledge, which is directly related to practice. Praxiological knowledge alone has as its subject matter the relation of means to outcomes which is what practicing (practice) is all about.

One other point should be raised in this discussion of the relation of knowledge to practice, i.e., policy or the expression of a political context which often stands between knowledge and practice. Policy is an expression of the power structure of a given group of persons as to the practices which are expedient. Means might not be made available such as financial resources, or certain behavioral outcomes might be ruled out such as critical political behavior. Thus certain curriculum practices might be designated as non-expedient irrespective of the practical curriculum knowledge base and the art of the teacher. The power structure or what it expresses would have to be changed to produce the curriculum change.

The attempted answer to the question which was raised in this paper, "What ought to be the relation of educational theorizing to curriculum change?" now can be stated. Curriculum change should be based upon adequate praxiological curriculum theorizing. Such theorizing should be based upon adequate event and formal and

valuational curriculum theorizing. Moreover, event curriculum theorizing should be based upon adequate event instruction theorizing. But more than a theoretical basis is required. The art of the teacher also must be a factor in curriculum change. Finally, to permit this ideal (ought) to be realized, limiting policy must be changed.

In response to this attempted answer, I can hear protest based upon my earlier declaration that praxiological curriculum theorizing is suggestive at most, and, consequently, is not adequate. What, then, is the knowledge base? Of course, there is no public one. The ideal is there to strive for, and meanwhile mandatory sweeping curriculum changes should be viewed with alarm. The solution seems to be twofold. First, any suggestive practical curriculum theoretical basis for curriculum change should be tempered by the experienced teacher who has implicit practical curriculum knowledge. The experienced teacher has private knowledge. Such a feedback mechanism (questionnaires and conferences to propose modifications in our curricular materials) was made a part of our project. Second, development of curricular materials should be carried out by more than one group so that alternative suggestive practical curriculum theoretical bases for curriculum change can emerge. With this emergence will come a rich heuristic milieu in which our teachers can bring about curriculum change.

FOOTNOTES

- (1) See Construction of Educational Theory Models, Cooperative Research Project No. 1632, The Ohio State University, 1963; "Instruction as Influence Toward Rule-Governed Behavior," in Theories of Instruction, edited by James B. Macdonald and Robert R. Leeper, Washington, D.C.: Association for Supervision and Curriculum Development, 1965, pp. 88-99; and Occasional Paper 65-176, "Curriculum Theory and Policy," Presented at the American Educational Research Association, 1965, Available from the Educational Theory Center or the Social Studies Curriculum Center, The Ohio State University.
- (2) The Republic, translated by W. H. D. Rouse, Book 9, 592.
- (3) 'Behavioral' is not taken in the restrictive sense of what is directly observable. The behavior may be indirectly observable through being related to behavior which is directly observable.
- (4) Ludwig Wittgenstein, Philosophical Investigations, New York: The Macmillan Co., 1953, paragraph 38.
- (5) Charles W. Morris, "Scientific Empiricism," in International Encyclopedia of Unified Science, Volume 1, Part 1, Chicago: University of Chicago Press, 1938, pp. 63-75.
- (6) H. Feigl, "Logical Empiricism," in Readings in Philosophical Analysis, edited by H. Feigl and W. Sellars, New York: Appleton-Century-Crofts, 1949, pp. 3-26.
- (7) Op. cit., paragraph 107.
- (8) Ibid., paragraph 109.
- (9) The term, 'praxiological' is taken from Tadeusz Kotarbinski's "Praxiological Sentences and How They are Proved," in Logic, Methodology and Philosophy of Science, edited by Nagel, Suppes, and Tarski, Stanford, California: University of Stanford Press, 1962, pp. 211-223.
- (10) See "Report on The Economics Curriculum Project," November 15, 1965, Available from the Social Studies Curriculum Center, The Ohio State University.
- (11) E. S. Maccia, Occasional Paper 64-166, "The Nature of a Discipline-Centered Curricular Approach," 1964, Available from the Social Studies Curriculum Center, The Ohio State University.
- (12) Jerome S. Bruner, The Process of Education, Cambridge, Mass.: Harvard University Press, 1960, p. 31.
- (13) Op. cit. in footnote 10, p. 1.